

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A sparse array antenna comprising series-fed antenna array columns comprising transmitting array columns and receiving array columns tuned to a respective transmit and receive frequency, each transmitting array column having multiple active transmitting radiator elements and each receiving array column having multiple active receiving antenna elements, wherein

said transmitting and receiving array columns are formed with a given distance between each one of the active transmitting radiator element elements and each one of the active receiving radiator element elements, the series-fed antenna columns being arranged in parallel to each other, thereby forming a symmetric interleaved transmit/receive array; and

active receiving radiator elements in the receiving array columns operate as parasitic elements in a transmit mode and active transmitting radiator elements in the transmitting array columns operate as parasitic elements in a receive mode, thereby reducing creation of grating lobes.

2. (currently amended) The antenna according to claim 1, wherein a distance between each transmitting antenna array column and each receiving antenna array column is typically increased to be of an order of close to one wavelength (λ) to thereby obtain a sparse array.

3. (currently amended) The antenna according to claim 2, wherein the series-fed array columns are formed as extended ridged slotted wave-guides, comprising slotted transmitting wave-guides and slotted receiving wave-guides, tuned to a-said respective transmitting and receiving frequency.

4. (original) The antenna according to claim 3, wherein when having number n of slots in each slotted transmitting wave-guide the number of slots in each slotted receiving wave-guide being generally $n \pm x$, where x represents an integer digit ($x = 0, 1, 2, 3 \dots$).

5. (currently amended) The antenna according to claim 2, wherein the series-fed array columns are formed as extended transmission lines containing radiation elements, the array columns being tuned to a-said respective transmitting and receiving frequency.

6. (currently amended) The antenna according to claim 1, wherein the sparse array antenna having a main lobe is arranged to be separable scannable to also provide reduced sidelobes entering visual space when scanning the main radiation lobe from an off boresight direction.

7. (currently amended) The antenna according to claim 1, wherein each one of the series-fed antenna column columns is narrowly tuned within a respective frequency band to thereby reduce coupling between the transmitting and receiving bands used.

8. (currently amended) The antenna according to claim 1, wherein the series-fed antenna array columns are ~~connected~~connectable to and ~~fed~~feedable from an active receive/transmit (T/R) module.

9. (currently amended) The antenna according to claim 2, wherein only one set of series-fed columns being actively used and another interleaved set of series-fed columns ~~are~~may be terminated by a ~~suitable~~load forming parasitic columns of the sparse array antenna.